

for 29°00	gaining rate — 0 ^s .62 per diem	temp. 52 ^o .9 F.
28°50	„ — 0 ^s .95 „	„ 52 ^o .8 F.
28°00	„ — 1 ^s .38 „	„ 52 ^o .3 F.
27°50	„ — 1 ^s .72 „	„ 51 ^o .9 F.
27°00	„ — 2 ^s .01 „	„ 51 ^o .5 F.

Combined with the former result by γ *Draconis*, I infer the following as the coefficient for barometer,—

$$+ 0^{\circ}.720 (b - 27.5)$$

and I assume — 1.70 for 27.5. There results,—

for 29°0	— 0.62	Error	00
28.5	— 0.98		+ .03
28.0	— 1.34		— .04
27.5	— 1.70		— .02
27.0	— 2.06		+ .05
26.5	— 2.42		—
26.0	— 2.78		— .14

I have to point out that in both series, the observations were taken with falling barometer, and to add that I wish to take them again from 26°00 to 29°00 rising. But noticing that the pendulum was becoming rusty, I discontinued observations after the last break, and took the pendulum down, and have had it electrogilt. I have remounted it, and rated it approximately, but now I am without the object-glass to the altazimuth. When that is returned, I shall resume the subject.

The resulting coefficient 0^s.720 may be of value, as I see by Sir G. B. Airy's paper on the "Figure of the Earth," in referring to the observations made by M. Carlini on Mont Cenis compared with those of M. Biot at Bordeaux. See *Encyc. Met.* "Fig. of the Earth," p. *239.

I have only to add that this paper affords the best answer, a complete negative, to one formerly written by a horologist, to show that for a pendulum swinging 2° on either side of 0, the barometer correction was nothing.

On the Parallax and Proper Motion of Lalande 21185.

By W. T. Lynn, Esq.

In vol. xlviii. p. 291, of the *Astronomische Nachrichten*, there is a paper by Dr. Winnecke, containing a provisional determination of the annual parallax of this star, which is of the seventh magnitude, and was discovered in May, 1857, by Prof. Argelander

to have a very large proper motion.* Dr. Winnecke calls it Argelander's second star, and has recently published (as No. xi. of the publications of the German Astronomical Society) his definitive determination of its parallax, with the details of the calculation. The result is an annual parallax of $0''.501$, with probable error $\pm 0''.01138$, corresponding to a distance of 412000 in terms of the Sun's mean distance from the Earth, over which it would take light $6\frac{1}{2}$ years to traverse.

It may be worth while to determine the proper motion of this star from recent meridional observations at Greenwich. It was observed in 1859 and in 1861, which observations are included in the two Seven-year Catalogues, for 1860 and 1864 respectively. In their reduction, account was not taken of the proper motion. It is desirable, therefore, to give here the corrected places, taking into account the approximate proper motion ($-0^s.05$ in R.A., and $+4''.7$ in N.P.D.); and then, by comparing these with an observation made at Greenwich in April of the present year, we have the means of deducing a tolerably accurate value of the proper motion.

Two observations were made in 1859, the results of which, corrected for the above approximate proper motion, give for mean place on 1859, Jan. 1,

R.A. $10^h 55^m 37^s.26$

N.P.D. $53^\circ 5' 11''.09.$

This would give for the reduced mean place in 1860, Jan. 1,

R.A. $10^h 55^m 40^s.56$

N.P.D. $53^\circ 5' 34''.86$

instead of the numbers given in the Seven-year Catalogue for 1860.

An observation of N.P.D. only by reflection was made in 1861. The mean of the two results by direct and reflected vision gives, similarly corrected, for 1861, Jan. 1,

Mean N.P.D. $53^\circ 5' 57''.30.$

From this the resulting Mean N.P.D. on 1864, Jan. 1, will be

$53^\circ 7' 9''.24.$

instead of the value given in the Seven-year Catalogue for 1864.

* A brief notice of Dr. Winnecke's preliminary determination of the parallax of this star is inserted in vol. xviii. of the *Monthly Notices*, p. 289. The annual parallax obtained from this first discussion of the observations is $0''.511$, which scarcely differs from the resulting value of Dr. Winnecke's recent and more elaborate investigation. Prof. Argelander's value of the proper motion of *Lalande 21185*, determined in 1857, is $-0^s.047$ in R.A., and $+4''.73$ in N.P.D.

The result of the observation made on 1872, April 10, is

Apparent R.A. $10^h 56^m 21^s.33$ Apparent N.P.D. $53^\circ 10' 20''.18$,

or, reduced to Mean R.A. and N.P.D. 1872, Jan. 1, allowing for the fractional part of the proper motion,

Mean R.A. $10^h 56^m 20^s.22$

Mean N.P.D. $53^\circ 10' 22''.15$.

By comparing the result of the observations in 1859 with that of the observation in 1872, we obtain for the proper motion,

In R.A. $- 0^s.044$

In N.P.D. $+ 4''.66$

which are almost identical with the values determined by Prof. Argelander in 1857.

This is the third largest stellar proper motion which has been detected, ranking next after *Groombridge* 1830 and 61 *Cygni*. *Lalande* 21185 appears at least to equal the latter in parallax.

Ephemeris of the Angle of Position and Distance of the Binary Star α Centauri, about the approaching Periastron Passage.
By Mr. Hind.

The following ephemeris exhibiting the interesting changes which are about to be presented by this binary, is calculated from the elements communicated to this Society by Mr. Eyre B. Powell, of Madras, which are founded upon the measures up to 1870 inclusive, and are the best hitherto published. The nearest approach of the components takes place about 1875.29, when the distance is $1''.2$. It is to be hoped the southern observers will give close attention to this object during the next few years, as more than an average lifetime must elapse before the opportunity again occurs, for procuring most essential data for the accurate determination of the orbit.

1872.00	$25^{\circ}05'$	$8^h 63^m 4$	1875.25	$98^{\circ}23'$	$1^h 20^m 9$
72.50	$26^{\circ}71'$	$7^h 8^m 59$	75.50	$137^{\circ}17'$	$1^h 29^m 2$
73.00	$28^{\circ}74'$	$6^h 9^m 00$	75.75	$162^{\circ}15'$	$1^h 79^m 6$
73.50	$31^{\circ}56'$	$5^h 74^m 4$	76.00	$175^{\circ}06'$	$2^h 48^m 5$
74.00	$36^{\circ}01'$	$4^h 40^m 2$	77.00	$191^{\circ}67'$	$5^h 41^m 4$
74.50	$44^{\circ}59'$	$2^h 96^m 7$	78.00	$196^{\circ}73'$	$8^h 13^m 8$
75.00	$68^{\circ}58'$	$1^h 61^m 4$			

If good measures are secured in 1873, we may be able to make a closer prediction of the rapid changes indicated by Mr. Powell's elements, in the latter half of 1874 and in 1875.